Tab I

Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of **Qwest Communications International Inc.** Consolidated Application for Authority to Provide In-Region, InterLATA Services in Colorado, Idaho, Iowa, Montana, Nebraska, North Dakota, Utah, Washington and Wyoming	WC Docket No. 02-314

JOINT DECLARATION OF DEAN FASSETT AND ROBERT MERCER ON BEHALF OF AT&T CORP.

I. BACKGROUND AND QUALIFICATIONS.

1. **Dean Fassett.** My name is Dean Fassett. I am the owner of Adirondack Telecom Associates, a consulting firm that provides expert engineering, economic modeling, and other technical assistance to telecommunications companies. My current address is 141 Juniper Drive, Ballston Spa, New York, 12020.

2. I graduated from the State University of New York at Cobleskill in 1967 with an AAS degree. From 1970 through 1996 I worked at New York Telephone (NYNEX), where I held positions as an Outside Plant Engineer, an Engineering Manager, and as an Area Construction/Engineering Operations Manager. In that capacity, I oversaw outside plant construction for the Adirondack District, covering 43 wire centers with a customer base of approximately 188,000 access lines. I supervised 14 first level management and 71 craft personnel responsible for designing and building outside plant facilities.

3. In 1996, I joined Frontier Communications of Ausable Valley, as a Contract Outside Plant Engineer and Construction Coordinator. In 1998 I joined Frontier Communications of Ausable Valley as a full time Contract Operations Manager and Engineer, where I was responsible for all aspects of company operations within my service area. In 1996, I founded Adirondack Telecom Associates, where I have worked as a consultant providing expert advice and analysis to telecommunications firms throughout the country.

4. I have provided outside plant local loop expert advice to AT&T and MCI relating the development of the HAI Model. I also have testified in 14 state jurisdictions on behalf of AT&T and MCI as an expert outside plant engineer and construction witness.

5. **Robert Mercer.** My name is Robert A. Mercer. I am the President of BroadView Telecommunications, LLC ("BVT"), a consulting firm specializing in analyses of the telecommunications infrastructure. The address of the firm is 5201 Holmes Place, Boulder, Colorado, 80303.

6. I received a Bachelor of Science degree in Physics from Carnegie Institute of Technology (now Carnegie - Mellon University) in 1964, and a Ph.D. in Physics from Johns Hopkins University in 1969. After receiving my Ph.D., I was an Assistant Professor of Physics at Indiana University from 1970 until 1973.

7. I then joined Bell Telephone Laboratories. Over the next eleven years, I held a variety of positions in the Network Planning organizations at Bell Labs and AT&T General Departments. My final position at Bell Labs was Director of the Network Architecture Planning Center, where I managed an organization that was responsible for early Bell System planning of

the Integrated Services Digital Network (ISDN), as well as systems engineering for new data services being planned by AT&T.

8. I joined Bell Communications Research (Bellcore, now Telcordia Technologies) in January, 1984, where I was Assistant Vice President of Network Compatibility Planning. Among other responsibilities, I directed Bellcore's technology analysis of various legal and regulatory proceedings at the federal and state levels. I also coordinated and provided direction to Bellcore's activities in domestic and international standards activities, and served as a member of the Board of Directors of the American National Standards Institute.

9. After leaving Bellcore in late 1985, I held positions with BDM Corporation and AT&T Bell Laboratories before joining Hatfield Associates, Inc., in early 1987. I held the positions of Senior Consultant, Senior Vice President, and President of the firm. On October 1, 1997, the former principals and employees of Hatfield Associates, Inc., formed HAI Consulting, Inc., and I became the President of that firm. At Hatfield Associates and HAI, I was extensively involved in the development of the various versions of the HAI Model. I also presented testimony on and defended the model in a large number of regulatory proceedings pertaining to the cost of Unbundled Network Elements and Universal Service.

10. In March of 2000, I left HAI to form BroadView Telecommunications. The firm provides strategic planning, education, and expert services related to public and private telecommunications infrastructure, dealing specifically with network architectures, technologies, services, and service providers. At BroadView, I have continued to present and defend the HAI Model in numerous regulatory proceedings, as well as working with HAI to further evolve the HAI Model as appropriate.

11. I also hold an adjunct faculty position in the Interdisciplinary Telecommunications Program at the University of Colorado in Boulder, where I am developing an executive seminar on telecommunications developments, teach a course on telecommunications technology, and serve on Masters thesis committees. I have previously taught a course on advanced data communications and computer networking for several years. I have taught many other courses and seminars as well for other organizations and institutions, in the areas of the telecommunications infrastructure, network technologies, broadband networks, data and voice communications, computer networking, and network management.

II. PURPOSE AND SUMMARY.

12. The purpose of our testimony is to demonstrate that the unbundled network element ("UNE") loop rates adopted by the state commissions in Colorado, Washington, Wyoming, Utah and Montana are substantially inflated by clear TELRIC errors.[1] We filed similar testimony in response to Qwest's first attempt to gain section 271 approval in these states.

13. In Part I of this declaration, we demonstrate that the UNE loop rates adopted by the Colorado Public Utilities Commission ("PUC") are inflated by clear TELRIC errors. The Colorado PUC correctly recognized that the cost model advanced by AT&T – the HAI 5.2a cost model ("HAI Model") – is capable of producing TELRIC-compliant UNE loop rates. Accordingly, the Colorado PUC stated that it would "look primarily to the HAI Model" to set Qwest's Colorado UNE loop rates. *See* Colorado Pricing Order at 38.

[1] The Baker, Starr, Denny Decl. (attached to AT&T's Comments) demonstrates that the loop rates in Idaho, Iowa, Nebraska, North Dakota also are inflated by clear TELRIC errors.

14. However, a model is only is good as the input assumptions used – an appropriately designed forward-looking cost model will not produce forward-looking cost estimates if it is not populated with forward-looking inputs.[2] Many of the key input values approved by the Colorado PUC, often with little or no explanation, were based upon Qwest proposals that violate fundamental TELRIC principles. As the Colorado Staff explained, "[t]he Qwest approach ignores the most fundamental TELRIC Principle: Existing costs should not be included in wholesale price calculations. Qwest includes these costs, in toto, then used anti-competitive adjustments as a means of transforming historical costs into future costs."[3] Because the Colorado PUC failed to adopt TELRIC-compliant inputs, Qwest's rates are vastly overstated. This is a classic case of "garbage in, garbage out."

15. We first summarize the Colorado PUC proceedings that resulted in the inflated non-TELRIC UNE loop rates in Qwest's SGAT. Next, we identify several of the non-TELRIC inputs adopted by the Commission at Qwest's behest, which substantially inflate Qwest's UNE loop rates. First, we show that the Colorado PUC clearly erred in adopting a split-the-baby approach to computing the mix of aerial and underground cable input. AT&T and other CLECs provided substantial evidence that a proper forward-looking percent of aerial cable would be less than 30 percent. Qwest, on the other hand, urged the Colorado PUC to use the portion of aerial cable that exists in its current (embedded) network. The Colorado PUC failed to set a TELRIC-compatible input and simply chose an arbitrary number that is closer to the portion of aerial cable that exists in Qwest's embedded network than it is to any reasonable forward-looking level.

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[2] *See, e.g., Colorado Pricing Order* at 40 (recognizing that "input assumptions constitute the main difference in the results of the cost models").

[3] *See CPUC Staff RRR* at 4.

16. Second, we demonstrate that the Colorado PUC adopted vastly overstated plowing costs, which are the costs for plowing the earth for the purpose of burying cable. Although the CLECs supported a TELRIC-compliant rate based on experience of professional engineers, and that was supported by a survey of plowing prices, the Colorado PUC adopted a rate that is more than 60% higher than those TELRIC levels.

17. Third, we demonstrate that the Commission improperly turned off a critical component of the HAI Model which is used to ensure that the distribution route distance calculated by the model in a given serving area matches the amount of distribution route distance required to connect the actual customer locations in that serving area. Turning off that portion of the model substantially inflates the rates produced by the HAI Model.

18. Fourth, we show that the input adopted by the Colorado PUC for average drop lengths in Colorado also is not TELRIC-compliant. The drop length adopted by the Colorado PUC is based on the average drop length in Qwest's embedded network. And although the Colorado PUC admitted that it could not fix all of the TELRIC errors in Qwest's drop length estimate, it nevertheless adopted a drop length based on Qwest's proposal.

19. Fifth, we demonstrate that the Colorado PUC erred when it adopted a network operations expense factor based on Qwest's embedded network operations, without making any forward-looking adjustments to account for the cost savings associated with a TELRIC-compliant network.

20. Sixth, we demonstrate that the same clear TELRIC errors that inflate Qwest's UNE loop rates also substantially distort the deaveraging process, which further deters competitive entry into Colorado's local telephone markets.

21. In Parts V through VII of this declaration, we demonstrate that the UNE loop rates adopted by the state Commission's in Washington, Wyoming, Utah and Montana also are substantially inflated by clear TELRIC errors.[4] In particular, we demonstrate that the methodologies employed by those state commissions to develop Qwest's UNE loop rates are inflated by numerous clear TELRIC errors.

III. THE COLORADO PRICING PROCEEDINGS.

22. Qwest's Colorado interconnection and UNE rates are based on the results of two separate Colorado proceedings. The Colorado PUC initially set permanent Colorado interconnection and UNE rates in a July 28, 1997 order, Docket No. 96S-331T ("331T Order").[5] Almost one and a half years later, on November 30, 1999, Qwest (then U S WEST Communications, Inc.) filed a proposed Statement of Generally Available Terms and Conditions ("SGAT") with the Colorado PUC pursuant to 47 U.S.C. § 252(f).[6] Qwest's SGAT contained the rates set in the 1997 331T Order, and numerous new rates that had never been reviewed by the Colorado PUC. In response, the Colorado PUC opened Docket No. 99A-577T ("577T Proceeding"), and ordered Qwest to notify all CLECs in Colorado of its new rates. Numerous CLECs, as well as the Colorado Office of the Consumer Counsel ("Colorado OCC") and the Colorado PUC's own staff ("CPUC Staff") intervened in the SGAT proceeding seeking review of the rates set in the 331T Order. These parties pointed out that that the rates in the 331T Order – and hence the rates in Qwest's proposed SGAT – were outdated, and fail to reflect changes in technology, changes in the regulatory field, and the merger of U S West with Qwest. These

[4] The Baker, Starr, Denny Declaration explains that the rates in Iowa, Idaho, North Dakota and Nebraska also are not remotley TELRIC-compliant.

[5] *See* Qwest I Application, Attachment 5, Appendix C.

[6] 47 U.S.C. § 252(f).

parties also showed that the rates in the 331T Order are substantially inflated by clear TELRIC errors, and that many of the rates in Qwest's SGAT were never even reviewed by the Colorado PUC.[7] Accordingly, the Colorado PUC released a Procedural Order, on December 29, 2000, in the 577T Proceeding, to review the rates in the 331T Order.

23. On January 16, 2001, Qwest filed cost studies purporting to support the 331T rates, and the numerous new rates contained in the SGAT. Qwest supplemented that testimony on April 23, 2001. During June and July of 2001, the CLECs, the Colorado OCC, and the CPUC Staff filed testimony showing that the rates in Qwest's SGAT were, in fact, vastly inflated above TELRIC levels. During that time, the CLECs also submitted new cost studies and new TELRIC-compliant UNE rates based on those cost studies. In particular, AT&T and XO Colorado, Inc. ("XO") filed a recurring cost study that develops recurring rates (including loop and switching rates) using a cost model called HAI Model, Release 5.2a ("HAI 5.2a"), and a non-recurring cost study that develops non-recurring charges ("NRCs") using a cost model call NRCM (which stands for "non-recurring cost model").

24. In late July, only two weeks before the scheduled August hearings, Qwest filed a new loop cost study, based on its LoopMod cost model, and urged the Commission to adopt loop rates based on that new cost study or, in the alternative, to incorporate the inputs from that cost study into the HAI 5.2 cost models proposed by the CLECs. The CLECs opposed Qwest's 11th hour filing of an entirely new cost study months after initiation of the proceeding, and only days before the start of hearings. CLECs noted that they could not possibly conduct sufficient

[7] *See, e.g.*, Before the Public Utilities Commission, State of Colorado, Docket No. 99A-577T, Application of Staff for Reconsideration, Reargument, or Rehearing of Decision No. C01-1302 (January 30, 2002) ("*CPUC Staff RRR*")

discovery to fully analyze and assess Qwest's newly submitted loop cost study. The CLECs also sought to, at least, file rebuttal testimony showing that the new inputs proposed by Qwest – again for the first time in its rebuttal testimony – were not TELRIC-compliant, and should not be incorporated into the HAI 5.2 cost model. The Colorado PUC denied both CLEC requests and chose to consider Qwest's new evidence without allowing CLECs to file rebuttal testimony responding to the new evidence submitted by Qwest. The Colorado PUC held hearings from August 6 through August 17, 2001, and the parties filed closing Statements of Position on September 12, 2001.

25. On December 21, 2001, the Colorado PUC issued the Colorado Pricing Order.[8] In that order, the Colorado Commission recognized that the rates in the 331T Order were stale, and did not reflect "the changes in technology, the regulatory field, or the merger of U S WEST with Qwest."[9] Accordingly, the Colorado PUC adopted new UNE rates. However, the Colorado Pricing Order contained numerous inconsistencies. For example, the body of the order often listed rates that differed from the rates in the list attached to the order. The reasoning in the order was also flawed. Thus, numerous CLECs, the Colorado Staff, and Qwest sought reconsideration of the order.

26. With respect to loop rates, the Colorado Pricing Order adopted the HAI 5.2a cost model proposed by the CLECs, but changed many inputs in the cost model based on evidence from the LoopMod cost study that Qwest filed at the last minute – and to which other parties

[8] Before the Public Utilities Commission of the State of Colorado, Commission Order, Docket No. 99A-577T (Mailed December 21, 2001) ("*Colorado Pricing Order*"). This order is attached to Qwest's Application at Attachment 5, Appendix C.

[9] *See Colorado Pricing Order* at 25-26.

were not afforded an opportunity to respond.[10] The Colorado Staff summarized the problem with the Qwest inputs: "The Qwest approach ignores the most fundamental TELRIC Principle: Existing costs should not be included in wholesale price calculations. Qwest includes these costs, in toto, then uses anti-competitive adjustments as a means of transforming historical costs into future costs."[11]

27. In the Colorado Pricing Reconsideration Order,[12] the Colorado PUC recognized the serious inconsistencies in its initial order and fixed those inconsistencies. However, the Colorado PUC fixed only a small portion of the serious clear TELRIC issues in the rates that relied on evidence from the LoopMod, and in some cases actually increased those rates in response to Qwest's reconsideration application. On May 7, 2002, AT&T, XO and Covad filed applications for reconsideration of the Colorado Pricing Reconsideration Order, and Qwest filed its reconsideration application on May 8, 2002. The Colorado PUC rejected the loop-related claims of the CLECs.[13]

28. As we demonstrate below, the Colorado PUC's adoption of certain loop-related inputs, which are based at least in part either on Qwest's old 331T rates or on Qwest's last minute LoopMod submission, are not TELRIC-complaint, and substantially inflate Qwest's Colorado UNE loop rates.

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[10] The problems with Qwest's switching rates are discussed in the Joint Declaration of Robert Mercer and Richard Chandler, attached to AT&T's Comments.

[11] *See CPUC Staff RRR* at 4.

[12] The *Colorado Reconsideration Order* is attached to Qwest's Application, Attachment 5, Appendix C.

[13] The *Colorado Further Reconsideration Order* is attached to the Qwest I Application, Attachment 5, Appendix C.

A. Qwest's Colorado UNE Loop Rates Are Substantially Inflated By Clear TELRIC Errors.

29. Qwest's UNE loop rates are based on a TELRIC-compliant cost model the HAI Model. However, as noted above (and as explained in detail below), the Colorado PUC adopted non-TELRIC-compliant inputs to use with the HAI Model, that result in non-TELRIC rates.

1. Plant Cable Mix.

30. HAI Model includes as inputs the percentage structure mix of four categories of outside plant – distribution cable, copper feeder cable, fiber feeder cable, and interoffice cable. These feeder, distribution, and interoffice facilities may be placed on aerial structures (*e.g.*, supported on telephone poles), underground (placed in conduit that is trenched underground), or buried in trenches (trenched directly into the ground). As a general matter, aerial cable placement is the least expensive – and thus would be used by an efficient competitor wherever possible – followed by buried cable. Generally the most expensive cable placement method is underground cable. The model's structure percentage inputs have been set taking placement costs and lifetime operations costs into account, and represent the recommendations of the Model's outside plant engineering team as to the most efficient configuration.[14]

31. An efficient Colorado network owner would deploy about 30 percent aerial cable. AT&T's run of the HAI Model for Colorado assumes that 28.2 percent of distribution cable deployed in Colorado is aerial cable and that 20.2 percent of copper feeder cable deployed in Colorado is aerial cable. The total aerial copper cable for Colorado is 28.1 percent. The HAI 5.2a model applies the appropriate percentage of aerial, buried and underground cable by density

[14] If abnormal local soil texture conditions are encountered, the model has the ability to shift the plant type between aerial and buried placement to maintain the most efficient configuration for those conditions.

zone. In distribution plant the percent of aerial cable ranges from 25 percent in the lowest three density zones to 85 percent in the highest density zone. For feeder cable the HAI 5.2a model also utilizes varying percentages of aerial plant by density zones. In the three lowest density zones the model appropriately assumes 50 percent of the feeder plant will be aerial. In the higher density zones the model appropriately decreases the percentage of aerial feeder plant, and only 5 percent of the feeder plant in the highest density zone is aerial.

32. Qwest, however, provided flawed evidence in the 557T proceeding that the percentage of aerial cable in Qwest's forward-looking network should be much lower. In particular, Qwest adjusted the aerial structure percentages accepted by the FCC in its Inputs Order and substantially reduced those inputs to match the aerial sheath mileage percentage shown in an August 2000 "internal Qwest report."[15] Qwest then ran the HAI Model using that data, and concluded that the total aerial percentage in the HAI Model run should be reduced to 12.3% – an amount that happens to be exactly equal to the amount of aerial cable in Qwest's embedded network.[16] According to Qwest, a lower percentage of aerial cable reflects "the public's aesthetic preferences for burial."[17]

33. Qwest's analysis is flawed and does not produce TELRIC-compliant results. Most fundamentally, Qwest's analysis is based on Qwest's embedded network. In a forward-looking network, Qwest would use far more than 12.3% aerial cable. Qwest's embedded outside plant network in Colorado is a network that has evolved over many years. Qwest has continuously grown its network by adding lines to its existing structure in a piecemeal fashion

[15] *See* AT&T Closing Argument at 19.

[16] *See Colorado Pricing Order* at 45 ("Qwest uses aerial facilities for 12.3% of its cable").

[17] *Colorado Reconsideration Pricing Order* at 31.

over time. This augmentation process has been most prevalent in the underground and buried structure types because that avoided pole congestion from multiple cables and pole loading limitations (and thus the need to replace or add poles). As a result of this augmentation process, Qwest's embedded network uses substantially more underground and buried cable relative to aerial cable than would be used in a forward-looking network.

34. In an efficiently designed forward-looking network, the number of multiple cables required within a route is greatly reduced. For example, all loops that extend beyond a 9,000 foot feeder segment would be provisioned over fiber-fed next generation digital loop carrier ("NGDLC"), eliminating the need for large numbers of multiple cables and, thereby, eliminating the preference for underground and buried plant structure type. Rather, the single cable would be placed on the less expensive aerial plant, and would result in a network with a much higher percentage of aerial plant compared to Qwest's embedded outside plant network.

35. Despite the clear evidence that Qwest's analysis of the appropriate cable plant mix was backward-looking, the Colorado PUC adopted a "split the baby" approach, and adopted an aerial plant percentage of only 20% – 8.1 percentage points lower than AT&T's proposal and 7.7 percentage points higher than Qwest's proposal. The Colorado PUC offered no reason for arbitrarily choosing a percentage plant closer to the non-TELRIC value proposed by Qwest. In fact, the Colorado PUC did not identify any particular flaw in the 28.1 percent value submitted by AT&T. Rather the Colorado PUC simply asserts, with no explanation, that "HAI uses an inflated estimate of the forward-looking percentage of aerial plant."[18] But as explained above,

[18] *Colorado Pricing Order* at 56.

that statement is false. The plant mix default values in the HAI Model are appropriate for both the distribution and feeder segments of a forward looking network by density zones.

36. As explained above, and as AT&T and other CLECs demonstrated in the 577T Proceeding, a TELRIC-compatible percentage of aerial cable in Colorado is at least 28.1%. The Colorado PUC's decision to lower that percentage nearer to a value that even the Colorado PUC has determined to be non-TELRIC-compatible is a clear TELRIC error. As a result of that TELRIC error, Qwest's UNE loop rates are inflated by at least $0.80 per month.

37. There also is a second and independent flaw with the plant mix adopted by the Colorado PUC. As explained above, the Colorado PUC improperly reduced the percentage of aerial plant used in the HAI 5.2a cost model from 28.1% to 20%. That left 8.1% of all cable to be assigned to another type of structure. Qwest argued that the unallocated plant should be split equally between buried plant and the most expensive structure, underground plant,[19] and the Colorado PUC agreed.[20] Even if there was some basis for reducing aerial plant below 30 percent, there is no possible basis for substituting a substantial amount of underground plant; rather, any such substitution would be to the next cheapest solution, buried plant. Thus, at the same time that the Colorado PUC arbitrarily lowered the percentage of aerial cable plant, it arbitrarily raised the percentage of expensive underground cable plant. Given the high cost of underground cable compared to buried cable, increasing the percentage of underground cable without basis clearly violates TELRIC-principles.

[19] *See Qwest RRR Request* at 19-20.

[20] *See Colorado Reconsideration Pricing Order* at 32.

38. As explained above, the Colorado PUC violated TELRIC principles by lowering the percent of aerial plant from 28.1% to 20%. But once the Colorado PUC did so, it at least should have reallocated all of the remaining plant to buried cable. By not doing so, the Colorado PUC committed a clear error that inflates Qwest's UNE loop rates by an additional $0.48.

2. Structure Placement Costs.

39. As explained by the Colorado PUC, "[p]lacement costs are those associated with placing cable, including costs for trenching or boring, and the frequency that those placement methods will be used in placing buried cable."[21] One of the costs associated with placing buried cable is that for "plowing." AT&T and other CLECs demonstrated that the costs of plowing would not exceed $0.80 per foot in the lowest density zones. The Colorado PUC agreed and set the rate at $0.80 per foot.[22]

40. In its first request for reconsideration of the *Colorado Pricing Order*, Qwest argued that plowing costs would be much higher – $1.44 per foot (the same amount used by Qwest's LoopMod). Qwest offered evidence that a survey conducted by Dean Fassett (one of the authors of this declaration) purportedly showed that plowing costs are actually much higher than $0.80 in rural areas.[23] According to Qwest, that analysis shows that plowing costs in rural zones are $1.44 per foot.

41. Based on this evidence the Colorado PUC reversed its prior finding that $0.80 is a TELRIC-compatible cost, and increased the rate to $1.30 – which amounts to total plowing costs of $1.44 after accounting for the surface texture difficulty multiplier in the HAI cost study. The

[21] *Colorado Pricing Order* at 44.

[22] *Colorado Pricing Order* at .

HAI 5.2a model applies both surface texture and bedrock multipliers as factors to the cost for the placement of buried and underground facilities in order to recognize the increased costs associated with certain types of surface and bedrock conditions. Within the cost study, 258 various soil textures have been identified and each has a default difficulty factor for the particular soil type. These difficulty factors range from 1.00, or no additional effect, to as high as 4.0, corresponding to a cost 300% percent higher than the normal placement cost. In the real world, engineers would try to modify their design plans to avoid the difficult soil textures and bedrock conditions that exist. Conservatively, however, the HAI 5.2a has assumed the difficult placement factors would apply to the entire cluster, or 100% of the buried and underground cable in the cluster . If the model is run using a $ 1.30 per foot for normal placement in Colorado, the overall plowing cost, accounting for more difficult placement, is $ 1.44.

42. Qwest's characterization of the cost study that I (Dean Fassett) conducted during 1996 and 1997 is wrong, and cannot be used to justify a higher plowing rate in lower density zones. It is true that my survey, as interpreted by Qwest, showed that the *average* per foot plowing cost bid by contractors was $1.44 per foot. That is based on observed maximum charges of $ 2.50 per foot and a minimum charge of $0.90 per foot. However, the contractor costs used by Qwest in its calculations to determine the average cost failed to include some lower contractor cost of the survey and also included cost for more difficult placement. Based on my analysis of that survey, I concluded that the best estimate of per foot plowing costs in Colorado is $0.80 per foot.

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[23] *See Qwest RRR* at 19-20.

43. To understand my conclusions, it is helpful to understand the study. The default input values for placement costs in the HAI Model cost model are based upon the many years of collective knowledge and experience of the HAI engineering team in actually preparing and awarding competitively bid contracts for placement activities in the construction of outside plant networks. I personally have over 31 years in the engineering and construction of these networks and awarding of construction contracts. In an effort to validate the reasonableness of placement costs in the HAI model, I contacted many contractors, including national contractors and contractors working for US West and other RBOCs. During this validation process I received plowing estimates as low as $0.40 per foot and as high as $7.00 per foot (but that $7.00 estimate is based on very rocky soil and a plowing depth that substantially exceeds average levels). Based on that evidence, I concluded that the input values of HAI model were well within the range of reasonableness.

44. Qwest's reliance on a short-hand average of all estimates in my survey is specious. In the real-world competitive business environment, it is not appropriate to award placement contracts to the *average* contract bidder instead of the lowest contract bidder. Any placement costs that are based upon average pricing instead of competitively bid prices would not be representative of the good business practices in the construction of an efficient OSP network and therefore not in accordance with TELRIC principles.

45. Moreover, plowing or placement cost should be based upon large volume lump sum contracts of at least $50,000 or more, as the FCC's *Inputs Order* states.[24] Qwest has not presented any competitively-bid lump sum or similar outside plant placing contracts to support

[24] *See Federal-State Joint Board on Universal Service*, Tenth Report and Order, CC Docket Nos. 96-45 & 97-160, FCC 99-304, ¶ 109 (released November 2, 1999) ("*Inputs Order*").

their placing costs assumptions, but has relied only upon inefficient and costly unit price contracts. Unit contracts, however, are typically limited to projects involving a relatively low amount of total expenditures over relatively short time frames, and thus produce inflated costs that are not appropriate for measuring costs that are TELRIC-compliant.

46. The purpose for entering into such contracts is to avoid the usual red tape involved with securing approvals from higher levels in the organization so as to allow construction to begin on routine projects without undue delay. The contracts serve both parties well. However, management recognizes that some premium cost is attached to the contractor's agreement to be available on short notice to meet a specific completion date. In contrast, when large construction projects are implemented, the construction contracting procedures are quite different, and typically involve competitive bidding and selecting a construction contractor based on the bid responses. In these cases, management expects and receives significant savings in unit costs of construction activities relative to the unit costs involved with routine contracts.

47. TELRIC requires that Qwest's entire network be reconstructed given the existing locations of its wire centers. Therefore, the appropriate approach to computing plowing costs is to model costs based upon what an efficient company would incur on a large-scale project, not on individual small-volume contracts. Thus, all legitimate evidence shows that a proper TELRIC estimate of plowing costs is $0.80, and that Qwest's short-cut averaging process is not TELRIC-compliant. This clear TELRIC-error overstates Qwest's loop costs by at least $0.09 per month.

3. Strand Distance.

48. The HAI Model uses a measure called "strand distance" to ensure the distribution route distance calculated by the model in a given serving area matches the amount of distribution route distance actually required to connect the actual customer locations in that serving area. The strand distance is an output of the same independent[25] process that creates the customer clusters that are used in the HAI Model. The strand distance is based on graph theory, where it is related to what would be described as the Minimum Spanning Tree ("MST") of the points that represent the customer locations.[26]

49. In particular, when the strand distance normalization option in turned on in the Model, the Model first calculates the total route distance in a given serving area by summing all of the outside plant components in that serving area.[27] This total distance is referred to as the Distribution Route Distance ("DRD"). It then calculates the ratio of the independently-determined strand distance to the DRD. Finally, it applies that ratio to each component of outside plant cable. This process ensures that when the route distance associated with all the outside plant components in that serving area are summed, the sum matches the independent

[25] The process of defining serving areas and determining the strand distance in each is done independently of the model calculations themselves, by a third-party company, Taylor Nelson Sofres Telecoms (TNS), whose expertise lies in creating demographic data bases.

[26] Unlike a true MST, however, which would connect individual nodes (premises) using direct "as the crow flies" routing between them, the strand distance is calculated assuming a longer right angle route between points, in order to more realistically reflect the way routing of distribution cable is done in the local exchange network.

[27] These components include the connecting cable, if any, between the main feeder termination and DLC RTs in the main cluster, the distribution backbone and branch cables in main clusters, the cables connecting outlier clusters to main clusters, and the distribution cable within the outlier clusters

measure of required strand distance. The strand distance normalization process is a mechanism similar to the MST approach utilized by the FCC SynMod.

50. The outside plant produced by this process is TELRIC-compliant because it is the amount needed to serve the full increment of demand. However, when the strand distance normalization option is not used, the HAI Model produces too much route distance in all but the most rural areas. This happens because with normalization turned off, the model conservatively assumes customers are spread uniformly throughout each cluster, and deploys enough cable to reach those uniformly-situated customer locations. In reality, though, customer locations are most often concentrated in parts of a cluster. In suburban areas, for instance, such concentration occurs due to parks, schools, and other open areas, or just because not all portions of the available land have been developed. In more urban areas, it occurs because there are unoccupied streets, plazas, parking garages, and the like.[28] Since, for the vast majority of clusters, the model conservatively overestimates the amount of distribution cable required if the stand normalization option is turned off, it thereby produces inflated loop rates

51. The Colorado PUC chose to allow Qwest to compute loop rates with the strand distance normalization turned off. As a result, the UNE-loop rates produced by Qwest are not TELRIC-compliant. The difference in the results produced by the model with normalization turned off or on is significant. In Colorado, the overall state-wide average loop rate decreases by $0.62 per month when strand normalization is turned on compared to the results from the Colorado PUC run of the model.

[28] In clusters with very few customer locations, which typically occurs in very rural areas, the model's algorithms may sometimes underestimate the amount of cable required to reach the assumed lot frontages.

4. Drop Length.

52. The "drop" is the wire that extends from the loop distribution cable termination to the actual customer network interface device or NID, which is typically located in or on the building to which telephone service is being provided. In layman's terms, the drop length is the length of wire from a pole-mounted terminal or buried pedestal to the customer's premises. AT&T submitted detailed cost studies showing that the forward-looking average state-wide drop length in Colorado does not exceed 69 feet.

53. There is no question that the average drop length of 69 feet computed by the HAI Model is TELRIC-compliant. This Colorado-specific state-wide drop length estimate of 69 feet is based on the actual number of drop wires per density zone and the estimated length of the average drop within each density zone. To estimate the number of drop wires, the HAI Model uses Colorado-specific geocoded information, which identifies the actual locations of customers. This geocoded information enables the model to determine the appropriate density and lot sizes for the cluster in which the customer is located and to apply the correct drop length The HAI Model assumes that each lot is twice as deep as it is wide, and that structures (to which drops run) are placed towards the front of the lot.[29] Based on this analysis, the average loop length using the default drop lengths by density zone is 69 feet for Colorado.

54. This estimate is consistent with the average loop length estimates produced by a 1983 Bellcore (now Telcordia Technologies) study (that is the most recent study by Bellcore). In that study, Bellcore analyzed the RBOCs' (including US WESTs') distribution facilities to

[29] Qwest's witness agrees that this assumption is appropriate. *See* Fitzsimmons Testimony, Colorado Docket 577T, page 85, line 8 (agreeing that "houses tend to be closer to the front of lots").

measure, among other things, average drop lengths. That study showed the national average drop length to be 73 feet.[30] Since 1983, the average size of new lots has decreased, as land values have increased. For example, during my field review of outside plant facilities in Colorado, I (Dean Fassett) observed zoning ordinances in cities (e.g., Boulder, Colorado) that have minimum lot sizes of 7,000 square feet and 25 foot setbacks for a typical residential lot, a lot size that translates into a 37 foot drop length.[31] Thus, it is hardly surprising that average drop lengths today are slightly lower than those in 1983.

55. Despite all of the evidence supporting a 69 foot drop length, the Colorado PUC rejected the 69 foot state-wide average drop length on the sole grounds that it "is not well supported by Colorado specific data."[32] But as explained above, the record in that proceeding clearly showed that – using Colorado-specific data – the average drop length in Colorado is 69 feet.

56. After dismissing the average drop length submitted by the CLECs, the Colorado PUC inexplicably adopted an "adjusted" version of the Qwest drop length proposal – which was based on Qwest's embedded loop statistics.[33] On that basis alone, Qwest's drop length estimate

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[30] *See* Telcordia Notes on Networks, Issue 4, October 2000, section 12.3.1.

[31] The drop length for a 7000 foot lot with a 30 foot setback would be 42 feet. Larger lots also have drop lengths that are considerably shorter than those proposed by Qwest. A 10,000 square foot lot with a 30 foot setback would have a drop length of 43 feet 2 inches. A 12,000 square foot lot would typically require a drop of 45 feet in length.

[32] *Colorado Pricing Order* at 43.

[33] *See Colorado Pricing Order* at 43 (noting that the adopted drop length "is supported as a forward looking . . . figure by taking into account Qwest's *current* state-wide average drop length, and then accounting for the effect of multi-tenant units") (emphasis added). Qwest's embedded network includes drops and NIDs with inefficiently long drops. In a forward-looking network, the newly installed drops and NIDs would be placed efficiently, thereby substantially decreasing drop lengths.

must be rejected. Moreover, the Colorado PUC itself conceded that there are other serious TELRIC errors in Qwest's drop length estimate. The Colorado PUC noted that Qwest's estimate was fundamentally flawed because it "excludes multi-tenant dwellings, exaggerating the average drop length" and because "some of Qwest's estimates are questionable, e.g., some of the estimated drop length are equal to the circumference of [the] entire lot."[34] In addition, AT&T demonstrated that Qwest's embedded network drop study was based on a biased sampling of Colorado end-user customers, which considered only residences that required a technician's visit, which creates a substantial bias in the sample because residences that require a technician's visit often have longer drops.[35]

57. Recognizing these serious problems with Qwest's drop length estimates, the Colorado PUC adopted a lower drop length of 75 feet. However, in adopting that drop length, the Colorado PUC purported to fix only a subset of the serious TELRIC errors that inflated Qwest's initial estimates. In particular, the Colorado PUC adopted a drop length based on Qwest's flawed estimates that purportedly adjusted for Qwest's failure to account for multi-tenant buildings, but did not account for the serious measurement errors in Qwest's drop length estimates (e.g., that some drop lengths in Qwest's analysis actually span the entire circumference of the lot), or the fact that Qwest's estimate is based on its embedded network.[36] Thus, by the

[34] *Colorado Pricing Order* at 43.

[35] Drops of longer lengths are more susceptible to trouble reports because the greater length creates more physical stress at the points of connection at the pole and customer residence attachment. Also, longer aerial drops have greater exposure to elements including wind, ice/snow, lightning and rodent (usually squirrels) damage. Buried drops of greater length are exposed to greater damage from accidental "dig-ups" and rodent damage.

[36] *See Colorado Pricing Order* at 43.

Colorado PUC's own admission, the 75 foot drop length that it initially adopted was still inflated by serious TELRIC errors.

58. Surprisingly, the Colorado Commission, in response to a Qwest motion for rehearing, reargument or reconsideration, further increased the drop lengths used to compute Qwest's UNE loop rates by an additional 16% to 87.2 feet. According to the Colorado PUC, its initial drop length failed to consider that "[i]n more rural areas, drop lengths will be longer" and that "in more urban areas, the average drop length will decrease."[37] The Colorado PUC, therefore, offered a new set of drop lengths that resulted in a state-wide average drop length of 87.2 feet.

59. The Colorado PUC's explanation for further increasing the already overstated average drop length is factually inaccurate. As noted above, the Colorado PUC's initial drop length estimate of 75 feet was based on Qwest's initial proposal of 136 feet, after adjusting for the fact that Qwest's initial proposal failed to account for multi-tenant buildings. And there is no evidence in the record that Qwest's initial proposal did not already account for differences in drop lengths between urban and rural areas. On the contrary, to the extent that Qwest's initial drop length estimate was based on its embedded network, the adjusted drop length of 75 feet adopted by the Colorado PUC did, in fact, account for those differences. In fact, the Colorado PUC actually justified its decision to increase drop lengths on the grounds that Qwest's input model does account for those differences.[38] Thus, the Colorado's decision to tack on additional drop length to Qwest's initial study is a clear error that results in double counting the effect of differing drop lengths between urban and rural areas.

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[37] *See Colorado PUC Reconsideration Order* at 41-42.

60. The additional increase in drop lengths further overstates Qwest's loop rates. The increase in loop rates from 75 feet (which is already overstated) to 87.2 feet inflates Qwest's loop rates by an additional $0.07 per month. Thus, accounting for all of the TELRIC errors that inflate the drop lengths – from 69 feet to 87.2 feet – used to compute Qwest in Qwest's loop rates, Qwest' loop rates are overstated by $0.10 per month.

5. Network Operations Expenses.

61. Network operations expenses represent Qwest's costs associated with specific operations activities identified below in accounts 65XX. The network operations expense factor input to the model is used to reduce the current level of network operations expenses in order to recognize TELRIC-compliant forward-looking savings Qwest is able to experience in these operations categories. The Colorado PUC committed a clear error when it adopted Qwest's 100% network operations factor, which assumes that Qwest will achieve no reduction in network operations expense on a forward-looking basis. Indeed, it is beyond both common sense and economic sense to assume that the deployment of more efficient technology in place of outdated technology would not reduce network operations expenses.

62. The deployment of forward-looking technologies will necessarily lead to expense reductions. For example, the deployment of SONET-based transport lessens the likelihood of outages, which in turn lessens network administration expenses. In fact, these forward-looking technologies are often deployed for the very reason that they will produce significant operational savings.

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[38] *See Colorado Further Reconsideration Order* at 9.

63. The proponents of the HAI Model inputs demonstrated in the 577T proceeding that an appropriate forward-looking reduction in the network operations expense factor would be 50%. That adjustment is consistent with the estimates used by other cost models to measure the savings that would be realized by operating a TELRIC-compliant network. The Benchmark Cost Proxy Model ("BCPM"), for example, which was sponsored by Sprint, US WEST, and at various times, New York Telephone, Pacific Bell, and BellSouth, calculates a level of network operations expense below those currently captured in ARMIS data. Thus, HAI Model's adjustment to embedded networks operations expenses is appropriate and may even then yield cost estimates that are conservatively high. Moreover, there are numerous examples of Qwest network operations accounts that should achieve significant cost savings in the future.

- Testing, Account 6533. With the elimination of high maintenance plant, testing requirements will be greatly reduced. The utilization of fiber fed NGDLC systems in the feeder portion in a forward looking efficient network greatly reduce trouble reports and the associated testing activities required. Reductions in this account also reflect the growing tendency for testing activities to be taken over by contractors, resulting in lower labor costs for ILECs. Finally, as noted above, the testing account includes expenses relating to retail activities that must be performed by the CLEC rather than the ILEC.

- *Plant operations administration, Account 6524.* Reductions in this category reflect the fact that a forward-looking network will require fewer supervisory personnel, and that equipment vendors will take over many of the installation and maintenance functions. It has been my experience (Dean Fassett) as an Operations Manager that the elimination of out-dated, high-maintenance plant greatly reduces plant operations administration expenses.

- *Engineering, Account 6535.* Engineering is a work group that is adversely affected by maintenance problems associated with antiquated plant networks. Outside plant engineers simply spend less time maintaining modern networks than they do outdated networks.

- *Provisioning, Account 6512.* Reduced frequency of network failures will reduce expenses associated with replenishing, stocking, warehousing and transporting equipment and other materials.

64. Thus, there is no question that Qwest's embedded network operations expense should be reduced substantially to reflect forward-looking costs. Accounting for these forward-

looking cost savings, Qwest's UNE loop rates would fall substantially, as would Qwest's other UNE rates.

B. THE CLEAR TELRIC ERRORS THAT INFLATES QWEST'S COLORADO LOOP RATES DRAMATICALLY DISTORT THE DEAVERAGING PROCESS, WHICH FURTHER INHIBITS LOCAL ENTRY.

65. The same clear TELRIC errors that inflate Qwest's UNE loop rates also substantially distort the deaveraging process, which further deters competitive entry into Colorado's local telephone markets. To fully understand this problem, it is necessary to understand how the CPUC currently allocates wire centers to UNE zones. The deaveraging process involves the following steps. First, the HAI Model is run with the wire center cost option[39] to produce a total loop cost for each wire center. Second, the wire centers are listed in the order of the loop costs produced by the HAI Model, with the lowest-cost wire center listed first. Third, an optimizing program developed by AT&T and adopted by the CPUC organizes the wire centers into three[40] zones of similar costs. It does so by minimizing the total deviation of individual wire center costs from the mean within each zone. For instance, if there were five wire centers, A, B, C, D, and E, with loop costs of, respectively, $5.00, $6.50, $11.00, $13.00, and $28.00, the optimizer would recognize wire centers A and B as having similar costs, C and D as having similar costs, and E differing substantially from the others and therefore belonging to a group of its own. The program would therefore organize the wire centers into those three zones. Thus, the assignment of wire centers to UNE zones is directly linked to the HAI model's loop rate calculations.

[39] The HAI Model can produce results by line density zones, wire centers, CBGs, or individual customer cluster, as selected by the user.

66. As noted above, we demonstrated in our initial declaration that, although the CPUC correctly adopted the HAI cost model to calculate Qwest's Colorado UNE loop rates, the CPUC improperly changed several critical inputs to the HAI cost model, resulting in substantially overstated loop rates. As we demonstrate below, those input changes also distorted the deaveraging process in a way that deters local entry. Specifically, we show that by computing rates without the strand distance normalization ("SDN") option turned on in the model (discussed in our initial comments at ¶ 16), the CPUC substantially distorts the results of the deaveraging process.[41]

67. Table 1 (below) shows the UNE zones, and loop rates within each zone based on the HAI cost model with all of the (non-TELRIC) inputs adopted by the Colorado PUC, except that the SDN module was turned on. The distribution of rates and UNE zones produced by the HAI model when the SDN module is turned on is consistent with the Colorado demographics, as the first zone generally consists of wire centers serving the densely populated Denver metropolitan area, the second zone generally consists of wire centers serving the population concentration along the "front range" (the area of Colorado within 20 miles or so of the eastern edge of the Rocky Mountains where the large majority of Colorado residents are located), and the third zone consists of the wire centers serving the remainder of the state.

[40] The optimizing program allows the user to specify three or more groups into which the wire centers are to be organized; the CPUC determined three was the appropriate number to use.

Table 1. UNE Zones And Rates With SDN Turned On.

Band	Average Loop Cost	No. of WCs	No. of Lines	Percent of Total Lines	Residence Lines	Business Lines
Band 1	$10.07	35	1,810,911	59.4%	1,053,888	615,749
Band 2	$14.75	34	782,103	25.6%	519,916	231,250
Band 3	$34.59	97	456,597	15.0%	320,153	113,558
Average	$14.92					

68. By turning off the SDN module, the CPUC dramatically distorted these results. Table 2 (below) shows the distribution of lines to UNE zones and the corresponding loop rates in each zone produced by the HAI model when the non-TELRIC inputs adopted by CPUC are used, and the SDN module is turned off. The non-TELRIC inputs adopted by the CPUC result in very low zone 1 loop costs, but there are fewer than 5.7% of the lines in that zone (compared to over 60% of lines in zone 1 when TELRIC-compliant inputs are used in the HAI model). That means that most of the lines for which potential new entrants will compete are in zones 2 and 3, which now have substantially higher loop rates than result when TELRIC-compliant inputs are used to compute UNE loop rates. *Compare* Table 2 (average loop costs in zones 2 and 3) to Table 1 (average loop rates in zones 2 and 3).

[41] Strand distance normalization (SDN) ensures the distribution route distance calculated by the model in a given serving area matches an independently-calculated amount of distribution route distance required to connect the actual customer locations in that serving area.

Table 2. UNE Zones And Rates With CPUC-Ordered Inputs (Including SDN Turned Off).

Band	Average Loop Cost	No. of WCs	No. of Lines	Percent of Total Lines	Residence Lines	Business Lines
Band 1	$5.91	4	173,554	5.7%	40,109	98,109
Band 2	$12.31	50	2,290,948	75.1%	1,443,803	702,339
Band 3	$32.74	112	585,109	19.2%	410,045	145,073
Average	$15.85					

69. The results in Table 2 are not even remotely consistent with Colorado's demographics. Now, only *four* wire centers in the central business district of Denver belong to Zone 1, while all remaining wire centers that previously had costs similar to these four have now been thrown into the second Zone with a substantially higher average cost.

70. There is no question that the clear TELRIC errors that result in this distorted allocation of wire centers to UNE zones will act as a deterrent to local entry in Colorado. That fact is illustrated by comparing the average cost per loop that would be incurred by a new entrant that seeks to serve customers in zone 1. Looking at Table 1, there are 1,810,911 lines in the lowest zone, at $10.07 per line, when the Colorado PUCs inputs are used, except that the SDN module is turned on. However, when the SDN module is turned off, those lines are split between zones 1 and 2, with 173,554 lines falling in the lowest zone (priced at $5.91) and the remaining 1,637,357 falling in the second zone (priced at $12.31). The weighted average cost of those lines is $11.70. Thus, the non-TELRIC inputs for the HAI model adopted by CPUC overstate the average cost of service for these customers by at least $1.63 per line per month ($11.70 minus $10.07).

71. The impact of the TELRIC errors on residential competition is even more dramatic. As shown in Table 1, when the SDN is turned on, as it should be, the HAI results and optimization routine result in 1,053,888 residential lines in zone 1, with a UNE loop rate of

$10.07. The CPUC's non-TELRIC decision to turn SDN off, however, moves the vast majority of those residential lines from zone 1 to zone 2 – indeed, there are only 40,109 residential lines in zone 1 under the CPUC's approach. Thus, according to the CPUC's non-TELRIC methodology, new residential entrants would pay an average UNE rate of $12.17 to serve those same customers. That overstates TELRIC-compliant residential UNE rates for those customers by $2.10 ($12.17 minus $10.07).

72. The bottom line is this: The non-TELIRC-compliant inputs adopted by the CPUC to develop UNE-loop rates deter competitive entry in two critical respects. First, as demonstrated in our initial declaration, those TELRIC errors substantially overstate UNE loop rates generally. Second, as demonstrated above, those same non-TELRIC errors dramatically distort the UNE loop deaveraging process in a way that further deters competitive entry.

IV. QWEST'S WASHINGTON UNE LOOP RATES ARE INFLATED BY CLEAR TELRIC ERRORS.

73. The recurring loop rates adopted by the Washington Utilities and Telecommunications Commission ("WUTC") are not TELRIC-compliant. The rates adopted by the WUTC are the result of two separate pricing proceedings ("Phases"). In Phase I, the WUTC purported to determined Qwest's (then US WEST's) and Verizon's (then GTE's) forward-looking recurring loop costs, net of common costs.[42] In Phase II, the WUTC adopted a "common cost factor" to increase the recurring and loop and switching costs developed in Phase I in order to account for the common costs associated with those elements. In the Phase II

[42] *See* Eighth Supplemental Order, Interim Order Establishing Costs for Determining Prices in Phase II; And Notice of Prehearing Conference, *Pricing Proceeding for Interconnection, Unbundled Elements, Transport and Termination, and Resale*, Docket Nos. UT-960369, -960370, -960371 (May 11, 1998) ("*Phase I Order*").

proceeding, the WUTC adopted recurring loop rates for Qwest (and for Verizon) equal to the Phase I costs grossed up by the common cost factor adopted in Phase II.[43]

74. The WUTC committed numerous clear errors in both Phase I and in Phase II that vastly inflate the recurring loop rates that would be produced by any reasonable application of TELRIC-principles. Even Qwest appears to recognize that these inflated recurring rates would not pass muster at this Commission and has, at the last minute (about a month before filing its initial Section 271 Application), unilaterally lowered those rates in order to "expedite consideration of Qwest's Section 271 application." *See* Thompson Decl. ¶ 9. Qwest claims that these eleventh hour rates reductions result in TELRIC rates simply because the new rates are lower than the rates adopted by the WUTC. This argument does not withstand scrutiny, because Qwest's initial rates are not remotely TELRIC-compliant, and because Qwest has made no effort to arrive at new rates based on any semblance of a TELRIC study. Arbitrarily reducing rates no more guarantees TELRIC compliance than does the non-compliant process by which the rates were set in the first place.

75. As noted above, the recurring loop rates adopted by the WUTC are the product of a two-phase proceeding. In Phase I, the WUTC adopted costs for those rate elements net of common costs. In Phase II, the WUTC made a few changes to the costs developed in Phase I, adopted common cost factors, and adopted final recurring loop rates. As demonstrated below the methodologies used by the WUTC to develop Qwest's Washington recurring loop rates in these proceedings were not remotely TELRIC-compliant.

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[43] *See* 17th Supplemental Order, Interim Order Determining Prices; Notice of Prehearing Conference, *Pricing Proceeding for Interconnection, Unbundled Elements, Transport and*

76. *Phase I.* The WUTC's purported purpose for the Phase I proceeding was "to develop an appropriate and consistent cost methodology with which to determine the costs of providing certain telecommunications services." *See Phase I Order* at 2. Three cost models were presented to the WUTC: (1) Sprint submitted the Benchmark Cost Proxy Model ("BCPM"); (2) Qwest submitted its Regional Loop Cost Analysis Program ("RLCAP"); and (3) AT&T submitted the Hatfield Model (the Hatfield Model is now called the "HAI Model"). *See Phase I Order* ¶ 13. The WUTC adopted none of these cost models to develop recurring loop and switching rates, finding that "none of the models satisfies the [WUTC's] . . . objective of being open, reliable, and economically sound." *Phase I Order* ¶ 38. The WUTC emphasized that the RLCAP cost study "is inflexible, closed, and uses inputs for buried cable and utilization rates that are inconsistent with its actual operations" and that the "BCPM inputs are based upon a proprietary study of LEC operations, thus violating the [WUTC] . . . requirement for the use of open models, its use of per line expenses for outside plant is not economically sound, and it has at least one algorithmic error." *Phase I Order* ¶ 264.

77. There is no question that the BCPM and RLCAP cost studies contained numerous clear TELRIC errors. With respect to the BCPM, even the WUTC was troubled by the model's assumptions: "we find it troublesome the method used to develop the BCPM inputs. The input values are based on a proprietary survey that was not made available to other parties. Furthermore, the mix of activities is based on the opinion of an industry group." *Phase I Order* ¶ 83.

Termination, and Resale, Docket Nos. UT-960369, -960370, -960371 (September 23, 1999) ("*Phase II Order*").

78. The fact that the BCPM is not TELRIC-compliant should come as no surprise to this Commission. Indeed, the Commission has in the past expressly rejected the underlying methodology employed by the BCPM to calculate loop costs, as well as many of the default inputs used in that model. In the *Platform Order*, 13 FCC Rcd. 21323 (1998), this Commission found that the HAI model's approach for determining how to "group and serve . . . customers in an efficient and technologically reasonable manner" was superior to BCPM's "simplist[ic]" approach that "generat[e]d artificial costs." *Id.* ¶ 46. In particular, the Commission found BCPM's methodology *flawed* because it would "require separate facilities to serve customers that are [in fact] in close proximity." *Id.* Similarly, in determining what approach should be used to "design" the outside plant, the Commission found that the BCPM, unlike the HAI model, did not "adhere to sound engineering and forward-looking, cost-minimizing principles." *Id.*¶ 54. Thus, the Commission found that BCPM did not use proper "optimization routines through use of sound network engineering design to use the most cost-effective forward-looking technology." *Id.* ¶ 61.

79. The Commission in its *Platform Order* and subsequent *Inputs Order*, 14 FCC Rcd. 20156 (1999), also rejected many of the key inputs used in the BCPM. For example, the Commission found that BCPM overstated costs by assuming that "loop lengths that exceed 12,000 feet will be fiber cables." *Platform Order* ¶¶ 68, 70. The Commission also has found the BCPM "assum[ption] that an efficient telephone company will benefit only marginally from sharing" is contrary to TELRIC principles. *Id. Inputs Order* ¶¶ 242, 243. And the Commission rejected the cable cost per input values supported by BCPM's sponsors, which were based on cable costs reported by the incumbent LECs, in favor of the publicly available data provided and supported by AT&T and the HAI sponsors. *Id.* ¶¶ 103, 105.

80. Qwest's RLCAP model also contains fundamental TELRIC errors that inflate loop costs. As summarized in the Report of the Administrative Law Judge in the Minnesota Generic UNE Cost Proceeding:[44]

- RLCAP, "like all the U S WEST models, . . . heavily rely on embedded costs and structures and assumptions based on old data;"
- RLCAP "does not actually model any distribution areas or compute costs based on information about the distribution areas in which actual customer locations are found, [and] neither provides nor uses any information about distribution area boundaries or distribution area living units;"
- RLCAP "does not attempt to model either actual or forward-looking distribution lengths in the 'scorched node' context required for a TELRIC analysis;"
- RLCAP uses "loop length data from several sources, [and] [o]f the various potential data sources mentioned, the documentation does not reveal which sources were actually used;
- RLCAP makes a number of illegitimate assumptions about the density group constituents of each grouping of wire centers, by, for instance, using the same density group assumptions across all 14 of its states;
- RLCAP "does not attempt to estimate costs for specific distribution areas," whereas "HAI constructs clusters based on actual locations of customers in Minnesota and then develops distribution costs based on the location of the cluster and its distance from the wire center;"
- RLCAP "makes no use of geocoded data to locate customers; [n]or do RLCAP's distribution area designs rely on census data; rather, [t]he distribution designs were developed by several U S WEST engineers in 1988, [and] U S WEST has not provided any other support for these designs;"
- Whereas "[c]orrect estimates of costs should have the numerator (the total increment of costs required to provide the element of concern) consistent with the denominator (the demand for the element to be provided with those facilities)," U S WEST "does not have a proper match of the numerator and denominator;"

[44] *In the Matter of a Generic Investigation of U S West Communications, Inc.'s Cost of Providing Interconnection and Unbundled Network Elements*, OAH Docket No. 12-2500-10956-2, MPUC Docket No. P-442, 5231, 3167, 466, 421/C1-96-1540, Report of the Administrative Law Judge, November 17, 1998, starting at ¶16.

- RLCAP's density group design approach "artificially limits the economies of scale potentially achievable in a scorched node environment," by failing to " permit the deployment of any equipment that is available provided that such equipment is least-cost and embodies forward-looking technology;" and

- U S WEST does not make consistent structure sharing assumptions between states, because, for instance, in Minnesota, "RLCAP assumes that developers will pay 20% of the costs of placing buried cable facilities in distribution areas and that when developers do not pay such costs, it will incur 100% of such placement costs," whereas in Oregon, "U S WEST signed a Stipulation with OPUC Staff in which it agreed that it was reasonable to assume developers would pay 35% of the placement costs for buried cables."

81. Based on these and other identified weaknesses, the judge concluded "RLCAP does not qualify for serious consideration in this proceeding. It has not been shown to produce reliable, reasonable results. It cannot be used to calculate geographically deaveraged rates in a meaningful way. None of its major defects can be remedied easily. RLCAP is an unacceptable model for the purpose of determining UNE costs for U S WEST in Minnesota."

82. Although much more succinct in his comments, the ALJ in Arizona found, and the Arizona Corporation Commission adopted, a similar finding with respect to U S WEST's LoopMod, the successor program to RLCAP: "Qwest's model is based primarily upon its embedded network and costs," and it "fails to adequately incorporate efficiencies that should be recognized in a TELRIC environment."[45]

83. Furthermore, both the BCPM and RLCAP cost models submitted in the Washington pricing proceedings are based on very stale data. Those cost studies generally rely on pre-1997 data. But efficiencies in the telecommunications industry combined with

[45] *In the Matter of the Investigation into Qwest Corporation's Compliance with Certain Wholesale Pricing Requirements for Unbundled Network Elements and Resale Discounts*, Arizona Corporation Commission Docket T-00000A-00-0194, Phase II Opinion and Order, June 12, 2002, p. 10 (emphasis added).

efficiencies enjoyed by Qwest given its post-1997 mergers have led to dramatically lower loop costs.

84. Rather than working with the parties to develop TELRIC-compliant cost studies, the WUTC changed some of the inputs in each of the cost studies, re-computed loop rates based on each of those adjusted cost studies, and "averaged" those costs to obtain what the WUTC termed a "cost floor[]" for loop rates. *See Phase I Order* ¶ 265. The WUTC's conclusion that its methodology created a TELRIC loop cost floor is nonsense. The WUTC conceded that the changes that it made to each cost study did not address the numerous TELRIC-errors in those cost studies. *See Phase I Order* ¶ 269 ("we could not modify the models to comport to our findings . . . in those cases we simply note the likely [directional] impact on the loop cost"). Thus, to the extent that the clear TELRIC errors that were not addressed by the WUTC overstated loop Qwest's Washington loop rates, the average of the cost models containing those errors results in loop rates that substantially exceed that which any reasonable application of TELRIC principles would have produced.

85. Even worse, the WUTC's "averaging" process is completely unexplained, and further overstates Qwest's Washington loop rates. After adjusting each of the cost studies to correct for some (but not all, as the WUTC conceded) of the clear TELRIC errors in those cost studies, the WUTC determined that the Hatfield, BCPM, and RLCAP cost models produced per-line monthly recurring loop costs of $13.53, $17.23, and $13.76. Based on these results, the WUTC determined that the "cost of the unbundled loop [for Qwest in Washington] is $17.00," *Phase I Order* ¶ 269, which is almost the same cost produced by the defective BCPM. The WUTC's "average" is more than $2.00 higher than the simple average ($14.84) produced by the three cost models that the WUTC itself determined produce non-TELRIC loop costs. To date,

the WUTC has never explained how, based on the rates produced by the three adjusted cost studies, it calculated a $17.00 loop rate. And AT&T has never been able to reproduce that loop rate, nor has any other party demonstrated the ability to reproduce that rate. The black-box characteristics of the loop rates adopted by the WUTC are, ironically, at odds with the reasoning provided by the WUTC for not adopting any one of the three cost studies supported by the parties – that "those cost models were not open, and did not provide[] all parties an opportunity to fully explore the advantages and the limitations of the difference cost models." *Phase I Order* ¶ 24.

86. Four months later, the WUTC further adjusted the BCPM to account for deferred taxes.[46] That change reduced the loop costs produced by the BCPM from $17.23 to $15.72. *See id.* ¶ 3. After making this change, the WUTC reported that the Hatfield, BCPM and RLCAP cost models produce loop cost estimates of $13.53, $15.72, and $13.76, respectively. The WUTC then asserted, with no explanation, that the "evidence in the record" supports a finding that "the cost of the unbundled loop is $16.25," *id.* ¶ 14, which is substantially *higher* than the loop cost produced by any of the three cost models. Not surprisingly, AT&T could not reproduce the WUTC's findings based on the record in that proceeding.

87. About one year later, the WUTC released its *Phase II Order*, wherein the WUTC adopted UNE loop rates, based on the costs approved in the *Phase I* proceeding and the *14th Supp. Order*. In the *Phase II Order,* the WUTC produced a table summarizing its purported findings in the *Phase I Order*. *Phase II Order* ¶ 205. The WUTC confirmed that the Hatfield,

[46] *See* Fourteenth Supplemental Order, Prehearing Conference Order Resolving Technical Issues, *Pricing Proceeding for Interconnection, Unbundled Elements, Transport and Termination, and Resale*, Docket Nos. UT-960369, -960370, -960371 (September 30, 1998) ("*14th Supp. Order*").

BCPM and RLCAP cost models produce loop cost estimates of $13.53, $15.72, and $13.76, respectively. *See id.* However, the table also included a line titled "Commission [WUTC] Adjustment per 8th ORDER [*Phase I Order*]." *Id.* Those adjustments increased the cost estimates produced by the Hatfield, BCPM and RLCAP cost models by $2.31, $0.75, and $2.68, respectively. *See id.* In fact, however, those adjustments were not adopted in the *Phase I Order* – indeed, the *Phase I Order* explicitly states that the WUTC made no such adjustment, and in fact was not able to make such quantitative adjustments. Rather, those adjustments appeared *for the first time* in the *Phase II Order*. To this day, the WUTC has not explained how it computed those adjustments, when it computed those adjustments, or what exactly those adjustments represent. Nor has any party been offered an opportunity to rebut those black-box "adjustments."

88. In reality, the loop cost adjustments listed in the WUTC's *Phase II Order* appear to be a *post hoc* justification for the $16.25 loop cost adopted by the WUTC in the *14th Supp. Order*. Indeed, after adding those unexplained cost adjustments to the loop costs adopted by the Commission in the *14th Supp. Order* the cost estimates produced by the Hatfield, BCPM and RLCAP cost models are $15.84, $16.47, and $16.44, respectively. And the average of these values is $16.25. Thus, it appears that the WUTC's adjustments are nothing more than an eleventh hour attempt to justify its adoption of a $16.25 loop cost for Qwest. On this record, there can be no finding that the WUTC applied TELRIC-compliant principles to develop Qwest's loop cost – indeed, it is impossible to determine what (if any) pricing principles the WUTC used to develop those costs.[47]

[47] According to the WUTC, the $16.25 loop cost adopted by the WUTC did not reflect common costs. Thus, to develop UNE loop rates the WUTC adopted a common cost additive for each of

89. We also understand that federal courts have stated that that crude averaging of rates from various non-TELRIC cost studies – whatever averaging process is used – cannot result in TELRIC-based rates. *AT&T Communications of New Jersey, Inc. v. Bell Atlantic-New Jersey*, Civ. No. 97-5762 (KSH), slip op. (D.N.J. June 6, 2000). There, New Jersey BPU was faced with two competing cost models – AT&T's HAI model and Bell Atlantic's proprietary cost model. *Id.* at 28-29. Although the New Jersey BPU found that Bell Atlantic's model did not follow TELRIC, like the WUTC, it questioned the way in which the HAI model calculated outside plant. Decision and Order, Docket No. TX 951205631 (N.J. BPU Dec. 2, 1997). And like the WUTC, having found all models "flawed," the Board simply cast aside the controlling legal standards – and its own assessment of the parties' proposed cost models – in favor of a crude "compromise" and took an average of the two cost models. *AT&T Communications*, slip op. at 27-29.

90. In reversing the New Jersey BPU's order, the court expressly rejected the Board's contention that the resulting rates were TELRIC compliant because, by averaging the two models, it balanced out the "flaw[s]" in the models. *Id.* Rather, the Court found that averaging the results of an embedded and forward-looking cost model resulted in "no real or tangible cost calculation at all." *Id.* at 29. The Court also observed that the Board's baby-splitting was logically flawed because the "averaging" was "applied evenly to all elements collectively" when, as here, the flaws in the various cost models affected rate elements differently. *Id.* at 28.

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the three cost models. The WUTC then adopted rates based on the average of the costs (including the common cost additive) of the three cost studies. Based on this analysis, the WUTC ultimately adopted a loop rate for Qwest for $18.16.

91. On this record, there is no basis on which this Commission can find that the loop costs adopted by the WUTC in the Phase I proceeding are TELRIC-compliant.

V. QWEST'S UTAH UNE LOOP RATES ARE INFLATED BY CLEAR TELRIC ERRORS.

92. Qwest effectively acknowledges that the UNE loop rates actually set by the Utah PSC are not remotely TELRIC-compliant. Instead of relying on those rates, Qwest has filed "new" UNE rates, based on a "benchmarking" analysis of the rates set in Utah. But Qwest's eleventh hour rate reductions should not be considered with respect to Utah. Despite filing the "new" rates that it claims are TELRIC-compliant, Qwest continues to advocate substantially higher rates in the Utah PSC's ongoing UNE rate proceeding. Thus, it is clear that Qwest's gambit is to get its section 271 application approved on the basis of its current rates (lowered only shortly before its Section 271 Application, and not justified on the basis of any TELRIC-compliant model it identified) and then subsequently have those rates hiked to competition-foreclosing levels.

93. For these reasons, Qwest's application must ultimately must be measured by the rates set by the Utah PSC. And there can be no doubt that the rates the PSC set for loops are inflated by clear TELRIC errors. Qwest's loop and switching UNE rates were set by the Utah PSC in 1999 on the basis of 1998 cost data. *See* Report and Order, Docket No. 94-999-01 (Utah PSC June 10, 1999) ("*1999 Utah UNE Pricing Order*"). Given that the costs of providing UNEs have declined considerably in since this time, these stale UNE rates cannot be considered to be representative of the forward-looking, economic costs of providing UNEs today.

94. But even judged on the basis of 1998 costs, the rates set by the 1999 Utah UNE Pricing Order must be considered excessive. In setting loop and switching rates, the Utah PSC

"split the baby," taking the average of AT&T's and US WEST's proposed rates. Although this resulted in rates that were somewhat lower than advocated by US WEST, the resulting rates were still excessive.

95. In particular, in its *1999 Utah UNE Pricing Order*, the Utah PSC found that US WEST's cost model did not satisfy the Commission's TELRIC methodology. As the Utah PSC correctly observed, the ICM "does not produce a forward-looking, economically efficient network" but instead "mimics the embedded costs of recent network experience." *1999 Utah UNE Pricing Order* at 6-7. Thus, the Utah PSC concluded that the ICM resulted in rates that were overstated. *Id.* at 7.

96. This conclusion was well-founded. The ICM uses a component called LoopMod to calculate loop investments. LoopMod is the U S WEST's successor to RLCAP. We have already noted that the Arizona Corporation Commission found LoopMod to be defective for the same reasons in summary that RLCAP is: it is largely based on embedded costs, and it fails to incorporate efficiencies that should be recognized in a TELRIC environment. As AT&T cost witness Douglas Denney testified in Minnesota, LoopMod has failed to correct *any* of the deficiencies in RLCAP the ALJ had earlier identified.[48] For instance, as described by Mr. Denney,

- LoopMod still does not use geocoded customer location data, but instead relies on distribution areas obtained from Qwest's Loop Engineering Information System

[48] *In Re Commission Investigation Of Qwest's Pricing Of Certain Unbundled Network Elements*, PUC Dockets No. P-442,421,3012/M-01-1916; *In the Matter of the Commission's Review and Investigation of Qwest's Unbundled Network Element (UNE) Prices*, PUC Docket No. P-421/CI-01-1375OAH Docket No. 12-2500-14490-, Rebuttal Testimony of Douglas Denney, p. 9 ff.

("LEIS") databases, which presumably represents Qwest's embedded/historical distribution areas;

- LoopMod continues to use the five generic distribution designs that are the same throughout Qwest's region, not specific to the state in question, and these generic designs do not consider actual customer information specific to each distribution area;

- LoopMod places distribution facilities in the same manner as RLCAP 4.0 by dedicating two or three distribution pairs per location depending on the density group, a treatment found to be unreasonable by the ALJ in the Minnesota generic UNE rate case because it creates inconsistencies between the numerator (the total increment of costs required to provide the element of concern) and denominator (the demand for the element to be provided with those facilities) of the cost-per-line calculation; and

- LoopMod maintains the same structure cost calculations that the Minnesota ALJ found "does not compute either actual or forward-looking structure costs."

97. On the other hand, the Utah PSC found that AT&T's HAI model was appropriately "forward-looking." *Id.* at 7 ("The record shows that the HAI model employs a forward-looking, economically efficient approach."). Nonetheless, the Utah PSC decided it would not rely solely on the basis of the HAI model because of concerns regarding the way in which HAI's used "proxy[s]" to determine the location of some customers. *Id.* The Utah PUC, however, did not find that by using proxy locations that the HAI model understated costs; to the contrary, it specifically rejected that claim. *See id.* at 7 ("we are not convinced by USWC testimony that the HAI model necessarily builds a deficient amount of outside plant."). Furthermore, the Commission's Synthesis Model uses the same proxy location process for 100% of customer locations, not just those for which geocoded information is not available.

98. Thus, given the Utah PSC's express recognition that the HAI model was forward-looking and did not understate the costs of outside plant – coupled with its finding that the ICM was an "embedded" cost model – the only appropriate course would have been for the Utah PSC to set rates using HAI model. The Utah PSC, however, did not follow this straightforward approach. Instead, the Utah PSC arbitrarily set rates on the basis of the simple average of those

calculated by the HAI model and US WEST's embedded ICM model. *See id.* at 7. But all this served to do was reduce somewhat the bias from using US WEST's ICM. As the Utah PSC recognized, the two models produce "significant[ly]" different "cost estimates." For example, with respect to loops, HAI generated monthly costs of $11.40 per loop while the ICM generated $21.51 per loop. *Id.* Thus, the resulting $16.46 average of the results generated by the two models is more than $5.00 per month in excess of that generated by the HAI model, which, as noted, the Utah PSC itself recognized was the only appropriately forward-looking model submitted in the proceeding.

99. The Utah PSC also used this arbitrary "split the baby" approach for switching rates. *Id.* This was clearly erroneous. Even if the HAI's method for calculating customer locations understated the necessary amount of outside plant – a conclusion rejected by the Utah PSC – that would not provide grounds for using an average of the HAI and the ICM to set non-loop UNE rates. That is particularly true given the fact that the Commission has endorsed HAI's switching cost module. *See Platform Order* 75-78 (finding that HAI "assume[s] the least cost, most-efficient and reasonable technology" use to provide switching and "generally satisif[ies] the requirement that each network function and element necessary to provide switching and interoffice transport is associated with a particular cost"). Thus, there can be no doubt that by averaging the results of the HAI with the "embedded" ICM that the Utah PSC set switching rates in excess of TELRIC. And as explained above, federal courts have expressly concluded that this type of averaging does not result in TELRIC-based rates. *AT&T Communications of New Jersey, Inc.* v. *Bell Atlantic-New Jersey*, Civ. No. 97-5762 (KSH), slip op. (D.N.J. June 6, 2000).

100. In its 2002 Utah UNE Pricing Order, the Utah PSC set rates for several additional UNEs, such as DS1 and DS3 loops and intra-building cables that were not addressed in the 1999

Utah UNE Pricing Order. *See* Order, Docket No. 00-049-105 (Utah PSC June 11, 2002) ("*2002 Utah UNE Pricing Order*"). Again, the rates approved by the Utah PSC suffer from a number of TELRIC violations. Most notably, at the hearings AT&T demonstrated that the cost models used by Qwest for these UNEs, and accepted by the Utah PSC, did not reflect efficient costs. In particular, AT&T showed that "Qwest generally overstates its prices [by] us[ing] models [that] depend on bids from relatively small contractors with short time horizons." *2002 UNE Pricing Order* at 8. In effect, Qwest "estimated the costs of a car by using the prices it would pay for the individual parts and labor to assemble those parts, rather than the price for the car as a whole." Post Hearing Br. of AT&T and XO, Docket NO. 00-049-105, at 20 (filed Utah PSC Nov. 30, 2001). The Utah PSC agreed with this argument, *UNE Pricing Order* at 8, but made no attempt to change Qwest's costs to reflect the impact of this bias. Instead, the Utah PSC simply "encourag[ed]" the parties to develop "evidence in [the] future" to address this issue. *2002 Utah UNE Pricing Order* at 8.

VI. QWEST'S WYOMING UNE LOOP RATES ARE INFLATED BY CLEAR TELRIC ERRORS.

101. On November 22, 1996, AT&T filed a petition for arbitration with the Wyoming PSC under the 1996 Act. After multiple rounds of testimony and a week of hearings, the PSC issued a 101-page order on the merits on April 23, 1997.[49] In its order, the PSC found that "the cost information which we now have before us would [not] support the accurate determination of prices for unbundled network elements which would be consistent with 47 CFR §§ 51.505 and

[49] Wyoming PSC Docket No. 70000-TF-96-319, *In the matter of the arbitration by the Public Service Commission of an interconnection agreement between U S WEST Communications, Inc., and AT&T Communications of the Mountain States, Inc., under 47 U.S.C. § 252* (order issued Apr. 23, 1997) ("1997 Arbitration Order").

51.511."[50] "Neither party has demonstrated to our satisfaction that its model fully and accurately addresses TELRIC or TSLRIC costing."[51] "U S WEST's cost study . . . utilized cost information that US WEST has allegedly submitted in Phase II [of a separate proceeding to set *retail* prices under state law], but on which the Commission has neither examined in appropriate hearings nor relied upon in any meaningful way."[52] And AT&T's cost study, "while arguably consistent with the federal guidelines, did not sufficiently recognize Wyoming's particular requirement of TSLRIC based pricing [for retail services]."[53]

102. The PSC ordered both AT&T and U S WEST to rerun their cost models with a PSC-specified cost of capital, PSC-approved current depreciation lives, and an input for income tax expense that reflect the absence of any state income tax in Wyoming. The PSC also ordered U S WEST to remove an allowance for supposedly unrecovered depreciation that US WEST had included in its cost study.[54] The average of the revised values submitted by the parties, the PSC announced, would serve as interim rates.[55]

103. Before taking further action in the arbitration, the PSC issued a decision in a closely related case involving U S WEST's retail prices.[56] The two cases were linked by the Wyoming Telecommunications Act of 1995, which directed the PSC to reform US WEST's

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[50] *Id.* at 21.

[51] *Id.* at 22.

[52] *Id.* at 44.

[53] *Id.*

[54] *Id.* at 21.

[55] *Id.* at 21 and 45.

[56] Wyoming PSC Docket No. 70000-TR-96-323, *In the Matter of the Application of US West Communications, Inc. for Authority to Implement Phase II of its Proposed Wyoming Price*

retail rate structure, with the ultimate requirement that all retail services would cover the TSLRIC of those services. Because the 1995 state statute required the adoption of cost-based rates, the retail price litigation raised many of the same issues that the PSC needed to resolve in the AT&T/U S WEST arbitration.[57]

104. With respect to threshold choice of cost models, the PSC found neither of the party's model fully acceptable. The PSC found that the loop cost model relied on by AT&T, an early version of the Hatfield Model, lacked sufficient granularity of data, had too many density zones (nine), and tended to load too many costs on the two lowest density zones. The Hatfield Model, however, was a "relatively open unitary model."[58]

105. The PSC's discussion of U S WEST's loop cost model, the RLCAP, was scathing: the RLCAP was a virtually unverifiable black box. Moreover, its inputs and assumptions—to the extent that they could be discerned—appeared to be designed to replicate the costs of U S WEST's embedded network, not the costs of an efficient forward-looking network.

- RLCAP's cost estimates depend upon "factor databases" that are under the control of U S WEST and which do not allow for either the performance of independent cost estimates or the performance of independent sensitivity analyses of U S WEST's loop cost estimates.
- RLCAP is largely a "closed" model. It is not possible to completely replicate its results because many inputs and resulting outputs are considered proprietary by U S WEST. Additionally, portions of this model (certain modules) are not available to outside parties.

Regulation Plan for Essential and Noncompetitive Telecommunications Services (decision served July 21, 1997) ("Phase II Retail Decision").

[57] *See* Phase II Retail Decision ¶¶ 68-80.

[58] *Id.* ¶ 94.

- We note that it uses five density zones for some calculations but that U S WEST uses a base rate area and three zones for actual pricing purposes in Wyoming—another discontinuity . . .

- We have not been able to see sufficiently into RLCAP and its associated models to ascertain how they deal with data or even what their components really are. It has been shown to be a slow and relatively cumbersome group of models which appear to have developed as in-house costing tools. They resist both examination and understanding, and therefore, do not appear to be able to be tested for compliance with the various legal standards which we must apply in this case (e.g., a reasonable and nondiscriminatory pricing result in the public interest) . . . .[59]

106. Accordingly, the PSC directed the parties to submit additional runs of the competing models using inputs designated by the PSC, with the further constraint that the Hatfield Model should be run to produce outputs in only three density zones.[60]

107. The PSC's choice of inputs for the compliance runs was a mixed bag. The PSC held that 65% of outside plant structure placement should be assumed to be "difficult" (i.e., above-average cost), a reversal of U S WEST's position in earlier litigation and other states, because US WEST's *embedded* cost data assertedly supported such a result.[61] Despite finding that "structure sharing will increase as telecommunications markets are opened up to competition and companies are forced to capitalize on cost saving opportunities in order to be competitive in this new business environment," the PSC assumed that only 25 percent of the cost of placing outside plant would be borne by other utilities.[62]

108. With respect to common overhead costs, the PSC rejected the 10.4 percent overhead cost factor proposed by AT&T on the theory that it "reflects too closely the level of

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[59] *Id.* ¶¶ 84, 87-88, 93.

[60] *Id.* ¶ 100.

[61] *Id.* ¶ 108.

[62] *Id.* ¶¶ 127-132.

cost that might be experienced in a truly competitive business environment"—i.e., was too TELRIC compliant.[63] Instead, the PSC split the baby by adopting a value of 15 percent—the average of the 10.4 percent factor proposed by AT&T and the lower end of the 20-25 percent range proposed by Qwest.[64] And the PSC explicitly split the baby in adopting a drop length of 90 feet, the "average of US WEST's stated [embedded] system average and AT&T's long urban drop length."[65]

109. On the other hand, the PSC rejected U S WEST's proposed cost of capital of 10.87 percent in favor of a value of 10.05 percent.[66] The PSC rejected U S WEST's proposal to adopt depreciation lives shorter than those previously prescribed by the PSC.[67] The PSC adopted an "objective" distribution fill factor of 75 percent.[68] And the PSC declined to approve the increases in nonrecurring charges proposed by Qwest.[69]

110. Wyoming law, however, has a peculiar feature: U S West has the right to reject PSC rate decisions that establish rates differing significantly from those proposed by the carrier. Wyoming Stat. § 37-15-203(b). U S West exercised this authority by rejecting the PSC's rate case decision in its entirety.

111. The derailment of the PSC's retail rate proceeding brought the pending UNE arbitration to a halt as well. After April 1997, the PSC issued no further decision on the merits

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[63] *Id.* ¶ 135.

[64] *Id.* ¶ 136.

[65] *Id.* ¶ 145.

[66] *Id.* ¶ 122-126.

[67] *Id.* ¶ 156-71.

[68] *Id.* ¶¶ 137-142.

of the unresolved cost and pricing issues for nearly two years. Instead, the PSC temporized, requesting additional rounds of evidence and holding additional hearings. The problem, the PSC announced in a letter-order to AT&T and U S WEST, was that the Commission had "determined that there should be basic 'symmetry' between the relevant wholesale prices set in arbitration and retail prices set in the U S WEST price plan case" (i.e., the then-pending retail price case).[70]

112. The PSC eventually issued a further decision on the merits on March 22, 1999.[71] In that decision, the PSC's retreat became a rout.

113. First, the PSC declined to adopt geographically deaveraged rates in the sense contemplated by 47 C.F.R. § 51.507(f)—i.e., deaveraging to reflect the density-based cost differences of urban, suburban and rural wire centers. Instead, the PSC adopted Qwest's rate structure, which divided rates into four concentric rate zones around each central office. The latter rate structure, by the PSC's own admission, was designed to protect Qwest's existing *retail* rate structure from competitive arbitrage, while ignoring most cost differences *between* wire centers.[72]

114. The PSC's adoption of Qwest's rate structure in turn determined the PSC's choice of cost models. "We must adopt US WEST's RLCAP model," the PSC held, because it accommodates "internal U S WEST data" and because it generates outputs in a format that

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[69] *Id.* ¶¶ 172-78.

[70] Wyoming PSC Docket No. 70000-TF-96-319 and 72000-TF-96-95, Letter Order dated Aug. 5, 1998 at ¶ 3.

[71] Wyoming PSC Docket No. 72000-TF-96-95 and 70000-TF-96-319, *In the Matter of the Interconnection Contract Negotiations Between AT&T Communications of the Mountain States, Inc. and U S West Communications, Inc. Pursuant to 47 U.S.C. Section 252*, Order on Rehearing (issued March 22, 1999).

[72] *Id.* ¶¶ 128, 131, 136, 157.

translates directly into U S WEST's deaveraging scheme.[73] The PSC made no mention of its previous findings that the RLCAP was an unverifiable black box, and offered no response to the evidence offered by AT&T during the 1997-99 proceedings that improvements to the Hatfield Model had eliminated the PSC's prior concerns over its granularity and accuracy.[74]

115. AT&T petitioned for rehearing of the March 1999 decision on April 21, 1999.[75] In its petition, AT&T noted that the PSC had never responded to the AT&T cost testimony showing that the RLCAP replicated the costs Qwest's embedded network, rather than the costs of a forward-looking network.[76] AT&T also reminded the PSC that it had never disavowed its June 1997 findings in the retail rate case concerning the unverifiability of the RLCAP inputs, and the apparent inconsistency between the model assumptions and the forward-looking assumptions of the TELRIC and TSLRIC standard.[77]

116. AT&T also sought rehearing of the PSC's approval of Qwest's "deaveraging" scheme. AT&T reiterated that Qwest's concentric rate structure ignored the density-based cost differences among wire centers, adding that even the Qwest witness who sponsored the rate design "testified that he had no idea how the structure of the zones was determined."[78]

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[73] *Id.* ¶ 157.

[74] *Cf. id.* ¶ 136.

[75] Wyoming PSC Docket Nos. 70000-TF-96-319 and 72000-TF-96-95, AT&T Petition for Rehearing of Commission's March 22, 1999 Order.

[76] *Id.* at 7 (citing record).

[77] *Id.* at 7-8 (citing July 1997 PSC decision).

[78] *Id.* at 11 (citing record).

117. The PSC responded with a further decision on June 30, 1999.[79] Acknowledging "the great reliance" of the Qwest cost models on "actual" costs, "U S WEST-specific data," "state-specific factors" and "'real world' checks" – *i.e.*, embedded assumptions—the PSC nonetheless insisted that the models "use forward-looking technology."[80]

118. On July 31, 2001, Qwest initiated a generic rate proceeding to permanent establish UNE prices for all CLECs in Wyoming.[81] In the aftermath of the costly and unproductive arbitration proceeding, only two CLECs intervened (AT&T and Contact Communications); AT&T subsequently withdrew without filing testimony. On June 19, 2002, Qwest settled the case by stipulation with Contact and the Consumer Advocate Staff of the PSC.[82]

119. Even Qwest evidently recognized that its Wyoming rates would not pass muster at this Commission. On July 1, 2002 – just before filing its Section 271 Application—Qwest unilaterally reduced certain of its rates for local switching usage, local switch ports, shared transport, and tandem switching. *See* Thompson Wyoming Pricing Decl. ¶ 12. Qwest claims that these eleventh hour rate reductions produce TELRIC-compliant rates because: (1) the new

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[79] Docket Nos. 70000-TF-96-319 and 72000-TF-96-95, Order on Petitions for Reharing of U S WEST Communications, Inc. and AT&T Communications of the Mountain States, Inc., and Amending Previous Orders (issued June 30, 1999).

[80] *Id.* ¶ 15e.

[81] Wyoming PSC Docket No. 700000-TA-01-700, *In the Matter of Qwest Corporation's Request to Open an Unbundled Network Elements TELRIC Cost Docket.*

[82] Wyoming PSC Docket No. 700000-TA-01-700, Stipulation and Agreement (June 19, 2002); Wyoming PSC Docket No. 70000-TA-00-599, *In the Matter of the Application of Quest Corp. Regarding Relief under Section 271 of the Federal Telecommunications Act of 1996, Wyoming's Participation in a Multi-State Section 271 Process, And Approval of Its Statement of Generally Available Terms*, Order on SGAT Compliance (July 9, 2002) at 2.

rates are lower than the rates adopted by the Wyoming PSC and (2) the new rates pass the Commission's benchmarking analysis, using Colorado as the benchmark state.

VII. QWEST'S MONTANA UNE LOOP RATES ARE INFLATED BY CLEAR TELRIC ERRORS.

120. Qwest's recurring and nonrecurring prices for UNEs and interconnection in Montana are the legacy of three sets of rate proceedings: the 1996-2000 arbitration litigation between Qwest's predecessor, U S WEST, and AT&T; the 2000-01 UNE case between Qwest and five small interveners; and the "benchmarked" rate adjustments that Qwest filed on the eve of its 271 application. None of the three sets of rate changes have produced TELRIC-compliant rates. Indeed, the PSC has disclaimed any finding of TELRIC compliance, acknowledging that the issue remains to be resolved in a future proceeding.

121. The issue of UNE prices under the 1996 Act first reached the Montana PSC in the 1996-98 arbitration between AT&T and U S WEST. AT&T initiated the proceeding by petitioning the PSC for arbitration on November 22, 1996. The PSC issued its decision in the arbitration four months later. Docket No. D96.11.2000, *Petition of AT&T Communications of the Mountain States, Inc. Pursuant to 47 U.S.C. § 252(b) for Arbitration of Rates, Terms and Conditions of Interconnection With U S WEST Communications, Inc.*, Order No. 5961b (March 20, 1997) ("*Montana Arbitration Order*").

122. In its decision, the Montana PSC adopted loop prices based on the cost model submitted by AT&T, the Hatfield Model, with certain upward adjustments proposed by U S WEST. The result was a total statewide average loop price of $27.41. *Id.* at 87. The PSC adopted AT&T's proposed prices for the NID, port, local switching, tandem switching, transport, signaling links, signaling transfer points, service control points/databases, collocation, and local

service provider change charge. *Id.* at 86-87. For collocation, the PSC adopted the rates proposed by U S WEST. *Id.* at 87.

123. In setting these rates, the PSC made no finding that they complied with the 1996 Act or with the TELRIC standard. The Commission found that major discovery disputes between AT&T and Qwest remained unresolved too long into the proceeding to leave sufficient time for the development of an adequate record and decision. Failure to complete discovery sooner, the PSC stated, "not only made it difficult for the other party to frame its arguments and make its case, [and] made Commission decisions on permanent prices for services and network elements not merely impractical but a virtual impossibility." *Montana Arbitration Order* at 5 ¶ 10.[83] Further, the PSC added, "due to the complexity of the [UNE cost] studies and the short time in which to arbitrate, it is impossible to conduct a thorough review of each of the studies." *Id.* at 81. Because of the "little time within which to complete the proceeding and render a final decision" on the "multitudinous issues and subissues" in the case, the "only practical method" of resolving that case was to "establish interim rates" only. *Id.* at 7 ¶ 15. The PSC promised to establish permanent rates "in a separate generic U S WEST costing and pricing docket where the parties can focus on costing and pricing issues and related policy matters." *Id.* at 81-82; *accord, id.* at 7-8 ¶ 16.

124. The PSC also declined in its March 1997 arbitration decision to prescribe rates in a geographically deaveraged form as required by 47 C.F.R. § 51.507(f). The PSC reasoned that

[83] In a subsequent order on reconsideration, the PSC made clear that the party injured by the unresponsiveness of its adversary in discovery was not U S WEST. "US WEST provided no showing of prejudice . . . Much of the information requested [by U S WEST] related to AT&T's costs, which have not been shown to be relevant in this matter." Docket No. D96-11.20, Order No. 5961c, Order on Petitions for Reconsideration (July 9, 1997), at 3-4.

the "FCC's geographic deaveraging requirements have been stayed by the 8th Circuit and we need not follow them." *Id.* at 83.

125. Nearly four more years passed before the PSC even attempted to cure this deficiency by issuing geographically deaveraged rates. Docket No. D99.12.2777, *Implementation of 47 C.F.R. § 51.507(f), Establishing Different Rates for Network Elements in Different Geographic Areas Within The State*, Order No. 6227b (Dec. 18, 2000). The "deaveraged" rates adopted by the PSC, however, were not deaveraged in the sense of reflecting the density-based cost differences of urban, suburban and rural wire centers. Instead, the PSC adopted a Qwest "deaveraging" scheme designed to protect Qwest's existing *retail* rate structure from competitive arbitrage. This rate structure divided rates into four concentric rate zones around each central office. The rate structure ignored all cost differences *between* wire centers. *Id.* at 6-8, 20. The PSC acknowledged that its action was driven primarily by a concern for "retail price stability," not cost recognition. *Id.* at 20. "There is reason to believe that Qwest's rate/revenue deaveraging proposal, although arguably related to costs, is arbitrary." *Id.*

126. While the deaveraging case was still pending, Qwest moved to increase the underlying rates. In June 2000, Qwest applied to the PSC for permission to implement changes—most of them large increases—in virtually all of its recurring and nonrecurring rates for UNEs and interconnection. Qwest based its cost studies on essentially the same cost models, including the ICM, discussed above. The PSC responded by instituting an investigation of the proposed rate changes in July 2000. Docket No. D2000.6.89, *Filing by Qwest Corporation, f/k/a U S WEST Communications, Inc. to Determine Wholesale Discounts, Prices For Unbundled Network Elements, Collocation, Line Sharing, and Related Matters.*

127. Perhaps because of the small number of local lines in the portion of Montana served by Qwest, the perceived high cost of rate litigation against Qwest, and the meager results of four years of UNE rate litigation between Qwest and AT&T, only six parties chose to intervene in the new case: Association of Communications Enterprises ("ASCENT"), Avista Communications of Montana, Inc., McLeodUSA Wireless, Inc., Montana Consumer Counsel, New Edge Networks, and Touch America, Inc.[84]

128. On June 6, 2001—six days before the scheduled beginning of trial—the three intervenors still remaining in the case (Avista, Montana Wireless, Touch America, and the Montana Consumer Counsel) abandoned the effort. They agreed to a Qwest "compromise" proposal that increased the "interim" state-wide average loop rate of $27.41, already among the highest in the United States, to $28.37. They agreed to make permanent the non-density based method of geographic "deaveraging" that Qwest had devised to protect its existing retail rate structure from competition. And they agreed to rates for switching and other UNEs based on Qwest's cost studies. *See* Docket No. D2000.6.89, Stipulation filed June 6, 2001; *id.*, Final Order on Stipulation (served Oct. 12, 2001).

129. There was no pretense that the stipulated rates represented any principled effort to comply with the TELRIC standard. To the contrary, the stipulation contained the express disclaimer that "[n]o party's position in this docket is accepted by the other parties by virtue of their entry into this Stipulation, nor does it indicate their acceptance, agreement or concession to any rate-making principle, cost of service determination, or pricing principle embodied, or arguably embodied, in this Stipulation." Stipulation ¶ 3.

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[84] Montana PSC Docket No. 2000.6.89, Notice of Staff Action (served July 28, 2000).

130. The Montana PSC, while ratifying the stipulation, made no findings that the stipulated rates were TELRIC compliant. The PSC expressly reserved the right to argue, in its recommendation to the FCC after Qwest's anticipated 271 filing, that "elements of the Stipulation should be changed before the FCC approves Qwest's 271 petition for interLATA market entry in the State of Montana." Docket No. D2000.6.89, Final Order on Stipulation ¶ 9. The PSC elaborated (*id.*, ¶¶ 10-11):

> 10. The Commission conditions its approval because this docket is related to Docket No. D2000.5.70, the Qwest Montana section 271 proceeding. Costing and pricing issues that arise in the 271 proceeding are not necessarily resolved by this Stipulation. Qwest concurs that the Stipulation is not all-inclusive and that other costing and pricing issues will remain if the Stipulation is approved. . . . The Commission expects that these and other costing and pricing issues will be addressed in another costing and pricing docket. . . .
>
> 11. Prices contained in the Stipulation may be at odds with final Commission recommendations on certain issues in the 271 proceeding. The Commission cannot be more specific because its analysis and decisions in the 271 proceeding are not complete.

131. Even Qwest evidently recognized that its Montana rates would not pass muster at this Commission. On July 3, 2002—just before filing its Section 271 Application—Qwest unilaterally lowered those rates to "expedite consideration of Qwest's Section 271 application." *See* Thompson Montana Pricing Decl. ¶ 13. Qwest claims that these eleventh hour rate reductions produce TELRIC-compliant rates because: (1) the new rates are lower than the rates adopted by the Montana PSC and (2) the new rates pass the Commission's benchmarking analysis, using Colorado as the benchmark state.

132. AT&T explains elsewhere why Qwest's benchmarking analysis is unsound. Here, it is sufficient to note that the Montana PSC, in allowing the new rates to take effect, expressly

disclaimed any finding they were TELRIC-compliant. "The Commission has not undertaken the review contemplated by 47 U.S.C. § 252(f)(3)(B) and consequently retains authority to continue review of the SGAT under 47 U.S.C. § 252(f)(4)." Docket No. D2000.6.80, *Review of Qwest Communications' Statement of Generally Available Terms Pursuant to Section 252(f) of the Telecommunications Act of 1996*, Order No. 6425 (served July 12, 2001).

VIII. CONCLUSION

133. For the foregoing reasons, the Colorado PUC committed numerous clear errors in adopting the non-TELRIC inputs advocated by Qwest.

VERIFICATION PAGE

I declare under penalty of perjury that the foregoing Declaration is true and correct.

/s/ Dean Fassett

Dean Fassett

Executed on: October 15, 2002

VERIFICATION PAGE

I declare under penalty of perjury that the foregoing Declaration is true and correct.

/s/ Robert Mercer

Robert Mercer

Executed on: October 15, 2002

Tab J

Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of **Qwest Communications International Inc.** Consolidated Application for Authority to Provide In-Region, InterLATA Services in Colorado, Idaho, Iowa, Montana, Nebraska, North Dakota, Utah, Washington and Wyoming	WC Docket No. 02-314

DECLARATION OF THOMAS H. WEISS ON BEHALF OF AT&T CORP.

I. BACKGROUND AND QUALIFICATIONS.

1. My name is Thomas H. Weiss. My business address is 405 Crossway Lane, Holly Springs, N.C., 27540. I am the President of Weiss Consulting, Inc. I received a Bachelor of Science Degree in Electrical Engineering from North Carolina State University at Raleigh in January 1970. I earned a Master of Science degree in Business Management from Duke University Graduate School of Business Administration (now the Fuqua School of Business) in 1973.

2. I am a Registered Professional engineer licensed to practice in Maryland and Missouri. I am also a member of the National Society of Professional Engineers and the North Carolina Society of Professional Engineers, both in the Private Practice Divisions. I also hold memberships in three specialist branches of the Institute of Electrical and Electronic Engineers: the Communications Society, the Computer Society and the Network Society.

3. I have been an active participant in academics within various university programs. I am the author of *Public Utility Plant Investment Decisions in the Face of Advancing Technology and Regulatory Policy Reform*, Proceedings of the 27th Annual Regulatory Conference, Iowa State University, Ames (1988). I have been a speaker and a panel member at the 1984 Public Utilities Conference, University of Georgia College of Business and at the 1988 Iowa State University Regulatory Conference. I also have served as a member of the faculty at the 1989 United States Telephone Association Advanced Management Workshop, which was sponsored by the University of Kansas at Lawrence.

4. Prior to founding Weiss Consulting, Inc. in 1994 – a telecommunications consulting firm that provides technical, management and economic consulting services to federal and state governments, as well as to private businesses – I practiced as a telecommunications engineer with a national local exchange carrier, and I have also worked for private consulting firms. From January 1970 through June 1978 I was an engineer and financial manager with General Telephone Company of the Southeast, a local exchange operating company owned by GTE Corporation (now Verizon Communications, Inc.). From 1978 to 1986, I was employed as a Senior Consultant with the public utilities consulting firm, Hess & Lim, Inc. And from 1986-1994, I was Vice President of Baker G. Clay & Associates, Inc., another public utility consulting firm.

5. In 1997, I was appointed Vice President – Operations Research for Vermont Telephone Company, Inc. where, in a general management capacity over a three-year period, I was charged with responsibility to improve the company's operations efficiency, its relations with regulators in the State of Vermont, and to assist the CEO in recruiting and hiring a senior executive to be responsible for customer service and regulatory relations. In 2001, I was

engaged as a consultant to the U.S. Agency for International Development where I worked with telecommunications companies and the Telecommunications Regulators Association of Southern Africa ("TRASA") to develop regulatory accounting and cost allocation systems for implementation in TRASA's fourteen member states.

6. More generally, I am a Registered Professional Engineer with over thirty-two years of experience in the telecommunications industry. My consulting practice has focused on technology, management and regulatory issues. I have extensive experience analyzing the prices charged for services that are rendered by domestic telecommunications utilities in both wholesale and retail markets.

7. I have presented expert testimony on communications matters both in federal and state courts, and I have testified in over one hundred and forty proceedings before public utility regulators in twenty-four states and the District of Columbia. I also have testified on economic and regulatory issues before the Federal Energy Regulatory Commission. And I testified on behalf of AT&T and WorldCom before the Colorado Public Utilities Commission ("CPUC") in CPUC Docket No. 99A-577T, the most recent Qwest UNE pricing proceeding.

8. The purpose of my declaration is to confirm that the testimony that I filed in opposition to Qwest's first round of unsuccessful applications seeking section 271 approval in the same states that Qwest now seeks section 271 approval is still accurate. Qwest has made no changes to its non-recurring costs that change the analyses or conclusions of my initial testimony.

VERIFICATION PAGE

I declare under penalty of perjury that the foregoing Declaration is true and correct.

/s/ Thomas Weiss

Thomas Weiss

Executed on: October, 15 2002